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NEW TARDIGRADA FROM WESTERN NORTH
AMERICA: I, *PSEUDECHINISCUS*

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This is the first article of an intended series describing Tardigrada from western North America, the primary purpose of which is to provide names for a later faunal study.

Pseudechiniscus goedeni, new species

Length excluding legs IV about 400 μ ; width 180 μ . Eyespots present, reddish. Dorsal plates with longitudinal and tranverse pattern comprised of numerous closely spaced granules; plates otherwise essentially smooth except for widely scattered larger granules. At high focus (400 diameters conventional or phase microscopy) granulation appears dark on a light background, while at low focus the identical pattern appears light on a dark background. Legs have plates with granules of moderate size. Intersegmental areas and venter are smooth; venter without plates. Both dorsal plates and pseudosegmental plate are medianly divided. Moderately long spines occur at five lateral positions, and dorsally on the pseudosegmental plate; lateral spines measure 105 μ , 67 μ , 80 μ , 85 μ , and 110 μ ; dorsal spine 40 μ . (Spinules occasionally occur near bases of last three lateral spines, and also the dorsal spines.) Three spinules may be present on the lateral margin of body, between spine and leg IV. Head with internal cirrus short, 17 μ ; papilla 13 μ , about three times longer than wide; external cirrus 34 μ . Leg I with small basal spine, leg IV with larger basal papilla. Internal claws of all legs with large recurved spur near base. Collar of leg IV with 8-9 sharp teeth

The type and 42 paratypes were collected 6 miles south-southwest of Breitenbush Hot Springs, Marion County, Oregon, 18 October 1962, by K. Goeden. The specimens were in lichens, on Douglas fir and on cedar.

This series was mounted in iodine-tinted Hoyer's. One skin contained three large eggs of about 100 μ diameter. Two individuals measured 250 μ , the rest between 320 μ and 450 μ , with most of the specimens between 350 μ and 370 μ .

The type and some of the paratypes are deposited in the Department

of Entomology, Davis, and the remaining paratypes with Dr. Franc Mihelčič.

This species is related to *P. islandicus* and to *P. hannaë*. It differs from *P. islandicus* in the subequal length of the lateral spines, and in the granulation of the cuticle not forming a reticulate pattern. It differs from *P. hannaë* in possessing an extra lateral spine and by having some lateral spines shorter. Further, the cuticular granules of *P. hannaë* are randomly dispersed, not concentrated in longitudinal and transverse bands.

***Pseudechiniscus raneyi*, new species**

Length excluding legs IV about 300 μ ; width 150 μ . Eyespots present, reddish. Cuticle of dorsal plates comprised of rather uniform polygons, somewhat larger toward the anterior margins of the dorsal and intersegmental plates. At high focus the polygons appear dark, at low focus, light. Leg plates have polygonal pattern of finer texture. Intersegmental areas and venter are smooth; venter without plates. Head and scapular plates appear subdivided by bands of smooth cuticle. Scapular, dorsal and pseudosegmental plates are to some extent longitudinally divided. Five lateral spines, moderately long at ends and shorter at middle of series; lateral spines measure 57 μ , 15 μ , 25 μ , 25 μ , and 175 μ . Long dorsal spines lacking but posterior edges of some dorsal segments have numerous small spines of varying length. Head with internal cirrus short, 10 μ ; papilla 9 μ long, almost as wide; external cirrus 25 μ . Leg I with small basal spine; leg IV with larger basal papilla. Internal claws of all legs with recurved spur near base. Collar of leg IV with 8-10 teeth.

The holotype with 16 paratypes are from 46 miles east of Fresno on highway 180, Tulare County, California, 4300 feet, 31 October 1962, taken from mixed lichen and moss on pine, by A. A. Grigarick. Twelve paratypes, 12 miles west of Tuolumne Meadows, Yosemite National Park, California, 8600 feet, 22 November 1962, from lichen on *Pinus jeffreyi*, by F. C. Raney.

The shortest specimen measured 220 μ , the longest 390 μ , with a length of 300 μ being most frequent. The type and some of the paratypes are at Davis, other paratypes are in the possession of Dr. Franc Mihelčič.

Lateral spines in all positions and a cuticle composed of polygons are not found in any other species of *Pseudechiniscus*. The greatest length of a lateral spine was noted to be 60 μ , on the right side of one specimen, on the left side of two specimens, and on both sides of one specimen.

A total of four species of *Pseudechiniscus* are now known to occur in Oregon and California. The finding of *P. suillus* on Santa Catalina is reported (Mathews, 1938) but we have not seen this species. *P. goedeni* is from southwestern Oregon. *P. victor* has been collected in mountain areas of northern California, in the Siskiyou Range and in the northern part of the Sierra Nevada. *P. raneyi* occurs in the Sierra south of Lake

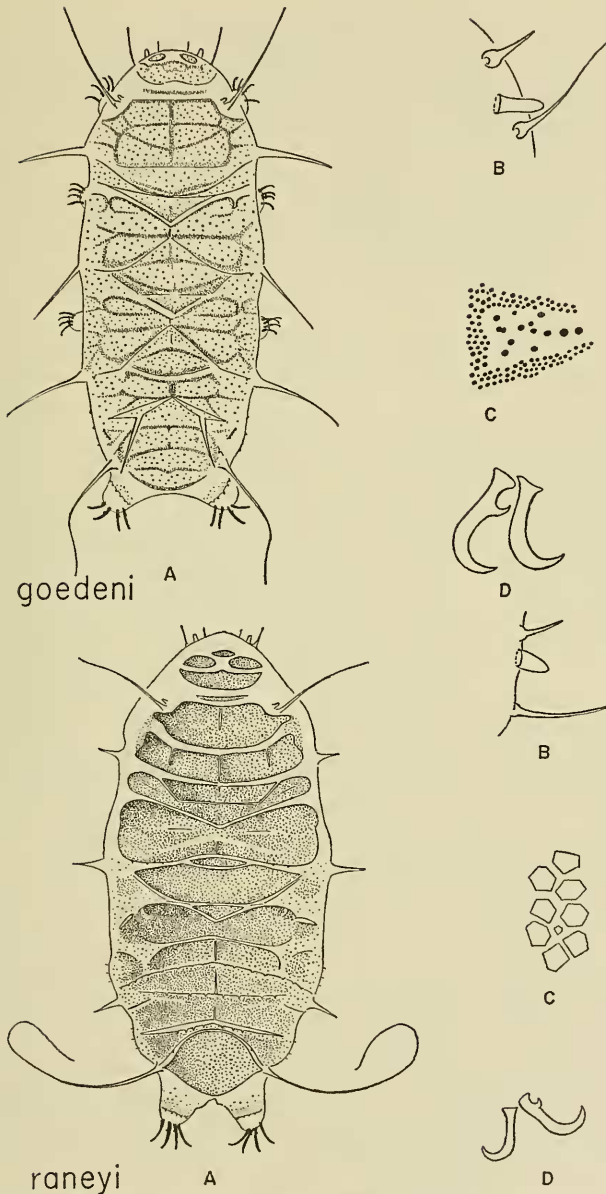


FIG. 1. New species of tardigrades; *Pseudechiniscus goedeni*, above, and *P. raneyi*, below. A, dorsal aspect; B, head appendages; C, section of cuticle; D, claws of leg IV.

Tahoe but two specimens, probably referable to this species, have been collected in the Coast Range of Mendocino County.

On the basis of collection data available, it now appears that each of the species mentioned above has a definable distribution and that no two species are present in any of these areas.

LITERATURE CITED

- MATHEWS, G. B. 1938. Tardigrada from North America. *Amer. Midl. Nat.*, 19 (3): 610-627.